

GOOD AFTERNOON. MY NAME IS PAUL POLLINGER AND I AM AN INDEPENDENT BUSINESS PERSON.

TODAY, I WOULD LIKE TO PRESENT TO YOU AN IMPORTANT NEW OPTION FOR WATERWAYS TRANSPORTATION.

AS YOU KNOW, “SHALLOW DRAFT” HULLS ARE DEFINED BY THEIR RIVER REQUIREMENTS IN THE SAME WAY THAT “DEEP DRAFT” HULLS ARE DEFINED BY THEIR OCEAN REQUIREMENTS.

WHAT IF THERE WERE A HULL THAT COULD NAVIGATE SHALLOW DRAFT ROUTES AND ALSO SAFELY TRAVERSE THE OCEAN ENVIRONMENT? FROM SHALLOW WATER TO DEEP WATER, AND THEN BACK AGAIN. THIS CAPABILITY DEFINES SOMETHING NEW IN WATERWAYS TRANSPORTATION

- A “COMBINED” RIVER/OCEAN HULL.

I WOULD LIKE TO INTRODUCE THIS NEW HULL AND TALK ABOUT THE IMPLICATIONS FOR THE MARINE TRANSPORTATION SYSTEM WHERE IT WILL OPERATE. OUR STUDIES ARE NOT YET COMPLETE BUT ARE VERY PROMISING. WHEN THIS RIVER/OCEAN HULL IS LAUNCHED, WE BELIEVE IT WILL OPEN A NEW WORLD OF TRADE AND MARKET POSSIBILITIES.

THE HULL

THE HULL TO IMPLEMENT THE “COMBINED WATERWAY” CONCEPT HAS BEEN DESIGNED BY A NAVAL ARCHITECT AND IS DESCRIBED IN MY HANDOUT AS THE RIVER/OCEAN HULL MOD 1©.

IN THE APPLICATIONS I PROPOSE, THE MOD I HULL WILL CARRY CARGO IN A COMPETITIVE MANNER. IT WILL PROVIDE SEAMLESS SHIPPING FROM THE UPPER RIVERS OF THE U.S. ALL THE WAY TO MEXICO, CENTRAL AMERICA, PARTS OF SOUTH AMERICA AND OTHER MARKETS. IT WILL AVOID MANY TRANSSHIPMENT PROBLEMS AND IS CONTAINER FRIENDLY. IT WILL PROVIDE LINKS TO MORE MARKETS THAN EVER BEFORE

POSSIBLE ON OUR WATERWAYS. IT IS AN EXCITING CONCEPT AND I HOPE YOU WILL BE PART OF THE PROCESS OF GETTING A HULL INTO THE WATER.

THE MOD 1 IS PHYSICALLY SIZED TO OPTIMIZE CARRYING CAPABILITY IN THE “COMBINED WATERWAYS” ENVIRONMENT. THE HULL IS 600’ LONG BY 108’ WIDE WITH A DRAFT VARYING FROM 5’ TO 20’. THE UPPER RIVERS WHERE MARKETS ARE LOCATED HAVE A CHANNEL THAT IS MAINTAINED AT A MINIMUM 9’ (2.75 M) DEPTH. PART OF THE HULL’S DESIGN TO MAKE NAVIGATION POSSIBLE WAS DETERMINED BY THE SIZE OF THE LOCK CHAMBERS, MANY OF WHICH ARE 600’ LONG BY 110’ WIDE AND WITH VARYING SILL DEPTHS. FOR PURPOSES OF COMPARISON, NINE TRADITIONAL RIVER BARGES FILL THE SAME LOCK AREA.

THE REST OF THE DESIGN ADDRESSES THE STRUCTURAL STRENGTH AND FREEBOARD REQUIRED TO CROSS OPEN DEEP WATER SUCH AS THE GULF OF MEXICO, THE CARIBBEAN SEA AND ADJACENT OCEAN COASTAL WATERS. ALL OF THESE SPECIFICATIONS ARE INCLUDED IN THE HANDOUT WHICH I HOPE YOU WILL PICK UP AFTER THE SESSION.

THE MOD 1 HULL WEIGHT IS 8,305 SHORT TONS IN COMPARISON TO THE 3,105 TON HULL WEIGHT OF A 9 UNIT BARGE TOW. THIS MEANS THAT AT THE 11’ DRAFT, THE MOD 1 HULL CAN CARRY ONLY ABOUT 62% OF THE CARGO OF THE 9 UNIT HULL. HOWEVER, THE MOD 1 HULL CAN CONTINUE ADDING CARGO AS THE WATER DEPTH INCREASES WHICH THE 9 UNIT CANNOT DO. THE MAXIMUM MOD 1 CARGO IS 28,000 SHORT TONS WITH THE DRAFT AT 20’.

COSTS

I WANT TO TALK BRIEFLY ABOUT THE COSTS OF THE MOD 1 HULL IN COMPARISON TO THE 9 UNIT BARGE TOW AND OTHER FORMS OF TRANSPORTATION. WE WILL BE CONDUCTING STANDARD SIMULATION COMPUTER MODELING ONCE MORE FUNDING IS AVAILABLE.

HERE ARE A FEW BULK TRANSPORTATION COSTS TO ORIENT US. THE BULK TRANSPORT RULE OF THUMB IS THAT SHIPPING BY TRUCK COSTS \$.0525/TON MILE AND SHIPPING BY TRAIN COSTS

\$.0253/PER TON MILE. THE LOWEST COST OF ALL SHIPPING METHODS, OTHER THAN A PIPELINE, IS THE SHALLOW DRAFT RIVER HULL WHICH COSTS ONLY ABOUT \$.0097/TON MILE. THE TRAIN, TRUCK, AND SHALLOW DRAFT INFORMATION COMES FROM THE UNIVERSITY OF ARKANSAS WEB SITE.

IT IS THIS SPREAD IN COSTS THAT CUSHIONS THE MOD I HULL IN THE UPPER RIVERS WHEN COMPETING WITH RAIL AND TRUCK AND WHY THE LONGER THE DISTANCE TO THE MARKET THE MORE ECONOMICAL THE MOD I HULL.

TOTAL COST TO MARKET.

I SPECIFICALLY WANT TO SHOW YOU HOW THE MOD 1 HULL AVOIDS MANY SHIPPING PROBLEMS AND HOW IT SUCCEEDS ECONOMICALLY.

BEING ABLE TO GO FROM SHALLOW TO DEEP WATER IS THE IDEAL SHIPPING METHOD. IN COMPARISON TO THE SHALLOW DRAFT OR THE DEEP DRAFT, THE MOD 1 CONCEPT IS CLEARLY BETTER.

TAKE THE SHALLOW DRAFT HULL, FOR EXAMPLE. THE AVERAGE TRADITIONAL RIVER TOW TRIP IS AROUND 450 MILES AND THAT TAKES INTO ACCOUNT THE GRAIN CARGO WHICH GOES THE LENGTH OF THE MISSISSIPPI RIVER. TODAY TRADITIONAL SHALLOW DRAFT BARGES ARE PRETTY MUCH CONFINED TO SHORT TRIPS TO NEARBY MARKETS CARRYING MOSTLY BULK CARGO. ABOUT 28% OF THE TRADITIONAL BARGES OFTEN RETURN EMPTY FOR THE FULL LENGTH OF THE TRIP. OF THE 29,000 BARGES ON THE RIVER SYSTEM NO ONE KNOWS HOW MANY ARE MOVING IN ANY ONE DAY BUT IT IS SUSPECTED THAT THE PERCENTAGE IS LOW COMPARED TO OTHER FORMS OF WATER TRANSPORTATION. THE

TRADITIONAL TOWS ARE LIGHT AND WHEN LOADED THEY HAVE LITTLE FREEBOARD. IF THEY ATTEMPTED TO GO INTO DEEP WATERS TO GET TO THE LARGER MARKETS THEY WOULD UNRAVEL AND EVEN SWAMP IN PLACES LIKE THE GULF OF MEXICO. IN ADDITION WHEN THE RIVER DEPTH IS LOW TRADITIONAL BARGES ARE BASICALLY IDLED.

THE MOD 1 DOES BETTER THAN THE DEEP DRAFT HULL AS WELL. OBVIOUSLY, DEEP DRAFT HULLS RUN AGROUND IN SHALLOW WATERS AND REQUIRE EXPENSIVE PORT FACILITIES. DEEP DRAFT HULLS ALSO OFTEN NEED TO BE FULLY LOADED WITH CARGO ACCUMULATED FAR FROM THE POINT OF PRODUCT ORIGIN OR TERMINATION.

TRANSSHIPMENT FOR BOTH SHALLOW DRAFT AND DEEP DRAFT HULLS IS EXPENSIVE AND, IN THE CASE OF CONTAINER SHIPPING, TRANSSHIPPING IS FURTHER COMPLICATED BY THE NEED TO LOAD OR OFF LOAD IN A PARTICULAR SEQUENCE BASED MAINLY ON DESTINATION AND WEIGHT. IN OTHER WORDS, NEITHER SHALLOW NOR DEEP DRAFT SHIPPING IS A VERY SEAMLESS OPERATION AND THE LESS SEAMLESS, THE MORE COSTLY IT IS.

IT IS NOT ONE SINGLE COST ELEMENT BUT LOOKING AT THE **TOTAL COST TO MARKET** OVER THE ENTIRE TRIP

- AS WATER GETS DEEPER,
- AS TRANSSHIPMENT IS REDUCED,
AS MORE EXPENSIVE MODES OF TRANSPORTATION ARE
RELACED,
- AS THE CHOICE OF MARKETS GREATLY EXPANDS AND
- AS THE MOD 1 HAS OPERATIONAL OPTIONS IN ADDITION TO
THE RIVER IT NEED NOT BE IDLED BY SHALLOW RIVER
WATER

THE MOD 1 ECONOMICS ARE CLEARLY BETTER. BECAUSE WE ARE IN A MATURE INDUSTRY, EVEN A FRACTION OF A

PERCENT IN THE TRANSPORTATION COST CAN MAKE OR BREAK A DEAL.

CONTAINERS AND CONTAINER MARKETS

CONTAINERS ARE ALSO VERY IMPORTANT TO THE MOD 1 HULL. THIS HULL IS DESIGNED TO BE DEEP DRAFT, CONTAINER FRIENDLY, AND IT OPENS THE OPPORTUNITY TO CAPTURE A SIGNIFICANTLY LARGER MARKET THAN IS NOW AVAILABLE. CONTAINER SHIPMENTS ON THE RIVERS ARE NOT CURRENTLY HAPPENING AND WE BELIEVE THE MOD 1 HULL CAN HELP CHANGE THAT.

IT IS THE ABILITY TO SEAMLESSLY SHIP CONTAINERS ON RIVERS AND THEN OUT INTO DEEP WATER PRIMARILY BECAUSE OF ITS HIGH FREEBOARD AND STRUCTURAL STRENGTH THAT DIFFERENTIATES THE MOD I HULL. THESE CHARACTERISTICS WILL ALSO PERMIT THE MOD I TO ENJOY THE STAMP OF APPROVAL THAT IS REQUIRED BY THE U.S. COAST GUARD FOR SAFE CONTAINER AND BULK SHIPMENT.

TO MAKE CONTAINER SHIPPING ECONOMICALLY VIABLE WITH THE MOD 1, WE HAVE CALCULATED THAT WE MUST MOVE APPROXIMATELY 1,200 CONTAINER SHIPMENTS EVERY 15-21 DAYS. THIS REPRESENTS A MINUSCULE AMOUNT OF THE TOTAL POTENTIAL RIVER TRAFFIC IN THE U.S., WHICH SERVES 22% OF THE ENTIRE U.S. POPULATION.

CRITICS WHO SAY THAT THE CONTAINER MARKET ON RIVERS IS NOT VIABLE WILL WANT TO TAKE A LOOK AT THE MOD 1 HULL SOLUTION.

IMAGINE THE MINNEAPOLIS AREA AS A DOOR TO THE CENTRAL CANADIAN MARKET. PITTSBURGH AS THE GATEWAY TO THE EASTERN U.S. MARKET. TULSA AS THE SPRINGBOARD TERMINAL TO A VAST WESTERN MARKET. WHEN WE ADD MEXICO, CENTRAL AMERICA, PORTIONS OF COLOMBIA, VENEZUELA. AND BRAZIL, TAMPA, KEY WEST, MIAMI, JAMAICA

AND SO FORTH, THE MARKET POTENTIAL REALLY GETS EXCITING.

LET US LOOK AT SOME POTENTIAL MARKETS. ONE PROPOSED SCENARIO WOULD BE TO SHIP AUTOMOBILE PRODUCTS BETWEEN THE STATES OF OHIO, INDIANA, KENTUCKY, MICHIGAN, THE APPALACHIA REGION, AND MEXICO. MEXICO IS THE SECOND LARGEST AUTOMOTIVE MANUFACTURER IN THE WORLD. MUCH OF THE MEXICAN AUTOMOBILE PARTS BUSINESS IS CLOSE TO SOUTHERN TEXAS WHILE SOME MANUFACTURING IS NORTH OF MEXICO CITY. USING THE MOD 1 HULL WOULD MAKE SHIPPING TO ALL OF THESE PLACES LESS EXPENSIVE. IMAGINE, FOR EXAMPLE, SHIPPING PRODUCT DOWN THE MISSISSIPPI TO MORGAN CITY, LOUISIANA, ACROSS THE GULF OF MEXICO TO VERACRUZ, TUXPAN, TAMPICO OR MATAMOROS WITH JUST A SHORT TRIP TO THE ASSEMBLY PLANT. THIS WOULD EFFECTIVELY REPLACE THE COSTLY RAILROAD OR TRUCK TRIP FROM THE STATES I MENTIONED WHERE THE PRODUCTS ARE SOURCED.

AS AN ASIDE, WHILE I AM DISCUSSING THE AUTOMOBILE BUSINESS I CANNOT IGNORE TALKING ABOUT “JUST IN TIME” AND HOW WE VIEW IT IN RELATIONSHIP TO THE MOD 1 HULL. WE BELIEVE THAT ECONOMICS WILL OVERRIDE CONCERNS ABOUT TRANSIT TIME. WITH THE MOD 1 HULL, IT WILL SIMPLY COST LESS TO SHIP THE PART TO THE ASSEMBLY PLANT OR DISTRIBUTION CENTER. I NOTE THAT ASSEMBLY PLANTS SEEM TO BE ABLE TO SHIP, VIA WATER, PRODUCTS CLASSIFIED AS “JUST IN TIME” FROM FAR-WAY JAPAN BUT FOR THE MOST PART NOT FROM MEXICO. THIS IS PUZZLING TO ME AND I WELCOME YOUR COMMENT.

A LONG DISTANCE EXAMPLE OF ANOTHER TRIP SCENARIO WOULD BE THE CONTAINER MARKETS FOR COFFEE. WITHIN REACH OF THE MAGDALENA RIVER AND STRETCHING FOR SEVERAL HUNDREDS OF MILES BELOW BARRANQUILLA, THE GREAT COLOMBIAN COFFEE GROWING REGIONS TODAY EXPORT MANY CONTAINERS OF COFFEE TO OUR MARKET.

MUCH OF THE COFFEE IS TRUCKED TO A PACIFIC OCEAN PORT AND THEN BROUGHT TO THE U.S. VIA THE PANAMA CANAL. OUR ENVISIONED ALTERNATIVE ROUTE IS TO PUT CONTAINERS OF COFFEE ON THE MOD I HULL LOCATED ON THE MAGDALENA RIVER, SAIL NORTH THROUGH THE CARRIBBEAN AND THE GULF OF MEXICO, THEN UP THE MISSISSIPPI TO MINNEAPOLIS WHICH COULD, IN TURN, TRAIN OR TRUCK THE REMAINING CONTAINERS TO CENTRAL CANADA.

ONE OF THE OTHER REASONS I AM HERE AT THE CONFERENCE IS TO LEARN MORE ABOUT CONTAINER TRANSPORT COSTS WHICH HAVE BEEN VERY DIFFICULT FOR US TO OBTAIN.

GENERAL DATA ON WAYBILLS AND OTHER FACTS COMPILED BY THE RAILROAD ASSOCIATION SHOWS THAT MOST RAILROADS KNOW WHERE CAR LOADING ORIGINATES, WHAT STATES THEY GO THROUGH, AND WHERE THEY TERMINATE.

BUT FACTS ABOUT WHERE CONTAINERS REALLY ORIGINATE AND TERMINATE AND WHAT THE INTRANSIT INVENTORY OF CONTAINERS IS DOES NOT SEEM TO BE DATA THAT IS READILY AVAILABLE TO THE PUBLIC. SOME TRUSTED, ASTUTE FREIGHT FORWARDERS PROBABLY HAVE A GOOD IDEA WHERE CONTAINERS ARE. HOWEVER, I SUGGEST THAT GOOD TOTAL COST TO MARKET DATA IS A MAJOR FACTOR IN MAKING THE RAILROADS SUCH STRONG COMPETITION FOR BARGES AND TRUCKS. IT FOLLOWS THAT I BELIEVE THE APPARENT LACK OF READILY AVAILABLE FACTS ABOUT CONTAINER AVAILABILITY AND COSTS COULD MAKE THE INTRODUCTION OF CONTAINERS ON THE RIVER MORE DIFFICULT.

IN OUR CONTAINER MARKET EVALUATIONS, WE CALCULATED THE TOTAL COST TO MARKET OF TRADITIONAL HULLS USING A REAL QUOTE DETAILING ALL COSTS (DOOR TO DOOR) AND COMPARED THAT TO A SIMULATED TRIP WITH THE RIVER/OCEAN HULL USING ADJUSTED BULK RATE NUMBERS AND SOME OF THE CONTAINER HANDLING COSTS WE WERE ABLE TO GET. THE RESULTING SPREAD WAS QUITE LARGE IN FAVOR OF THE SIMULATED RIVER/OCEAN TRIP. WE STILL HAVE

WORK TO DO ON THESE NUMBERS BUT IT IS AN ENCOURAGING FIRST LOOK.

THERE ARE MANY SHIPPING NEEDS AND OTHER IDEAS TO BE CONSIDERED. HERE ARE SOME OTHER IDEAS I HAVE BEEN WORKING ON.

- FOR INSTANCE, WITH ITS HIGH, PROTECTIVE FREEBOARD THE MOD I HULL COULD BE AN ATTRACTIVE OPTION FOR ROLL-ON, ROLL-OFF AUTOMOBILE TRANSPORT.
- WHAT ABOUT TRANSFERRING OIL FROM A SUPER TANKER TO SEVERAL MOD 1 HULL TANKER VERSIONS LOCATED ON THE PACIFIC SIDE OF THE PANAMA CANAL?
- WE ARE STUDYING THE IDEA OF A PARTIAL ALUMINUM HULL AND ALUMINUM CONTAINERS TO TRY TO INCREASE PRODUCTIVE CAPACITY IN THE UPPER RIVERS.

SECURITY

BECAUSE TRANSSHIPMENT IS REDUCED, BECAUSE THE SHALLOW DRAFT OFTEN POSITIONS THE MOD I HULL CLOSER TO THE ORIGIN AND TERMINATION POINTS OF THE CONTAINER, SOMEWHAT BECAUSE OF ITS SIZE (1,200 TEU), AND BECAUSE IT DOES NOT PICK UP CONTAINERS IN ONE HUGE BLOCK IN ITS PARTICULAR MARKETS THE MOD 1 HULL SHORTENS THE LIST OF PERSONS WHO NEED TO BE TRUSTED. USING COFFEE AS AN EXAMPLE, IN CENTRAL OR SOUTH AMERICA THE INDIVIDUAL DRIVING THE TRUCK TO THE MOD I HULL MAY KNOW BOTH THE INDIVIDUALS LOADING AND SEALING THE CONTAINER AS WELL AS THE CREW OF THE MOD I HULL. ON THE WAY TO MINNEAPOLIS THE MOD I HULL MAY OFF LOAD THE COFFEE NEAR 10 -20 ROASTER OR DISTRIBUTORS. THE CREW MAY BE KNOWN TO THOSE COMPANY'S LOCAL TRUCK DRIVERS AS WELL. SO NOT ONLY IS THE COFFEE LESS EXPENSIVE IT HAS A QUALITY OF SECURITY AND SERVICE THAT IS DIFFICULT TO MATCH. HOWEVER, WE MAY ALSO STOP AT PORTS SUCH AS NEW ORLEANS WHERE CONTAINERS WILL BE DRAWN FROM THE STANDARD POOL WITH ITS THE RISKS BEING THE SAME AS ANY OTHER VESSEL.

CONCLUSION

IN CONCLUSION, I BELIEVE THAT THE MOD 1 HULL REPRESENTS A TRULY UNUSUAL OPPORTUNITY. IT IS AS THOUGH OUR WATERWAY INFRASTRUCTURE HAS BEEN WAITING FOR JUST SUCH A HULL.

TO MY MIND, IT IS ALMOST AS IF A COMPLETE SUPER HIGHWAY AND BRIDGE SYSTEM HAS BEEN BUILT AND ONLY LOCAL PICKUP TRUCKS ARE USING IT. OTHER THAN INTRODUCTION OF THE HULL ITSELF, LITTLE ADDITIONAL INVESTMENT SEEMS NECESSARY.

WHILE WATERWAY MAINTENANCE IN THE U.S. IS NOW EVEN MORE IMPORTANT AND ADDITIONAL INITIAL INVESTMENT ON RIVERS SUCH AS THE DREDGED MAGDALENA RIVER AND RIO SAN JUAN MAY BE NEEDED. THE MOD 1 HULL WILL FOSTER **REAL JOBS** AND GENERATE PROFITS FROM THE DAY IT ENTERS THE WATER.

EXPANDING THE MARKET WITH THIS NEW COMBINED RIVER/OCEAN HULL ADDRESSES VITAL NEEDS OF THE U.S. MARITIME TRANSPORTATION SYSTEM. I HOPE TO SUPPLY COST INFORMATION TO EMPOWER MANUFACTURING, AGRICULTURAL, MINING, AND OTHER TRADING COMPANIES TO EVALUATE THE MOD 1 HULL BENEFITS. FOR IT IS THEY AND THEIR FREIGHT FORWARDERS WHO WILL ULTIMATELY DECIDE THE **FUTURE** OF THE MOD 1 HULL.

I WOULD LIKE TO THANK THE UNITED STATES ARMY CORPS OF ENGINEERS FOR HOSTING THIS CONFERENCE AND ME, AND THANK ALL OF YOU IN THIS ROOM FOR LISTENING.

Request for Information

In order to identify total cost to market for the River/Ocean Mod 1 Hull, specific data is essential. If you have access to data needed, please contact me with information about the questions below.

Thank you very much.

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TOTAL TRANSPORTATION COST TO MARKET

\$/TEU (include Overhead and Profit if applicable)

1. Pick up container at originating point (plant loading dock for example). \$ _____
2. Truck TEU to vessel siding. \$ _____
3. Off load containers to temporary storage near crane/loading vehicle. \$ _____
4. Transfer TEU to crane/ loading vehicle position in required sequence. \$ _____
5. Load TEU from pier side preposition mid stream transfer \$ _____
6. Delay in sailing time for vessel to come alongside pier or mid stream transfer cost. \$ _____
7. Use an average weight per TEU or say 19.5 tons gross in heavy option. Statute or Nautical miles to land destination. River miles plus Gulf miles plus Caribbean miles etc. Then use cost per ton mile for earlier numbers. \$ _____
8. Off load at a shallow draft port (e.g. near Veracruz or Honda on the Magdalena River). \$ _____
9. Load TEU on train or truck to final destination or next to destination. \$ _____
10. Miles to next to final or final destination. Cost/Ton mile \$ _____
11. Off load at final or next to final destination \$ _____
12. Repeat 9-11 until final destination is reached. \$ _____

13. Add cost of getting empty container from container pool \$ _____
14. Add inventory carrying cost interest if quoting against other modes which may be faster. \$ _____
15. Adjust for tare weight of container if steel or Al. \$ _____
16. Adjust for possible empty container penalty at final destination. \$ _____
17. Adjust for container dwell times at ports. \$ _____
- TOTAL** \$ _____

